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TABLE 6-1
FEDERAL ARARS FOR THE MOSES LAKE MAINTENANCE FACILITY

Requirements	Applicable or Relevant & Appropriate	Comment (informal and not legal opinion)				
Archeological and Historic Preservation Act Title 16 USC 469a	Applicable	This act requires that actions conducted at the Site must not cause the loss of any archeological and historic data. This act mandates preservation of the data and does not require protection of t actual facility. The requirements of this Act are potentially applicable based on a determination whether such archaeological data occur on Site.				
Clean Air Act of 1977, as amended Title 42 USC 7401 et seq.	Applicable	The Clean Air Act (CAA) regulates emission of hazardous pollutants to the air. Controls for emissions are implemented through federal, state, and local programs. Pursuant to the CAA, EPA has promulgated National Ambient Air Quality Standards, National Emission Standards for Hazardous Air Pollutants, and New Source Performance Standards. The Clean Air Act is implemented in the State of Washington through the Washington Clean Air Act. Washington Clean Air Act criteria which are potentially ARAR for the Moses Lake Maintenance Facility Site are presented in Table 6-2 under the State ARAR discussions.				
Clean Water Act of 1977 Title 33 USC 1251, as amended		The Clean Water Act establishes the guidelines and standards to control discharge of pollutants to waters of the U.S. Selected sections are discussed below.				
Water Quality Standards 40 CFR 131	Applicable	40 CFR 131 establishes the requirements and procedures for states to develop and adopt water quality standards based on federal water quality criteria that are at least as stringent as the federa standards. Washington State has received EPA approval and has adopted more stringent water quality criteria under WAC 173-201A.				
National Pollutant Discharge Elimination System (NPDES) 40 CFR 122 to 125	Applicable	The NPDES program controls release of toxic pollutants through monitoring requirements and implementation of a best management practices program. The substantive requirements of the program would be required if discharge of treated waste water were to occur as part of remediation; however, a permit would not be required due to a MTCA exemption.				
Section 404 of the Clean Water Act	Not Applicable	Section 404 regulates the placement of fill in the waters of the United States including wetlands. Wetlands will not be filled in association with the Site.				
Endangered Species Act of 1973 Title 16 USC 1531 et seq.	Applicable	The Endangered Species Act of 1973 establishes requirements for the protection of threatened and endangered species. The requirements of this act are potentially applicable based on a determination of whether such species occur on the Moses Lake Maintenance Facility Site or could be impacted by Site remedial activities.				

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TABLE 6-1

FEDERAL ARARS FOR THE MOSES LAKE MAINTENANCE FACILITY

Requirements	Applicable or Relevant & Appropriate	Comment (informal and not legal opinion)
Hazardous Materials Transportation Act 49 USC 1801, et seq		
Hazardous Materials Regulation 49 CFR 171	Applicable	No person may offer to accept hazardous material for transportation in commerce unless the material is properly classed, described, packaged, marked, labeled, and in condition for shipment. These requirements are applicable to hazardous material generated during remedial activities that would be sent offsite for disposal.
Hazardous Materials Tables, Hazardous Materials Communications Requirements, and Emergency Response Information Requirements 49 CFR 172	Not Applicable	These requirements are applicable if hazardous waste is generated during remediation and is transported offsite. Tables are used to identify requirements for labeling, packaging, and transportation based on categories of waste types. Specific performance requirements are established for packages used for shipping and transport of hazardous materials. Since hazardous wastes are not present on the Site, this regulation is not applicable.
National Historic Preservation Act of 1966 Title 16 USC 470	Applicable	The National Historic Preservation Act requires that historically significant properties be protected. The National Register of Historic Places is a list of sites, buildings or other resources identified as significant to United States history. An eligibility determination provides a site the same level of protection as a site listed on the National Register of Historic Places. The requirements of this federal law are potentially applicable based on a determination of whether such properties occur on the Moses Lake Maintenance Facility Site.
National Oil and Hazardous Substances Contingency Plan (NCP) 40 CFR 300	Relevant & Appropriate	Since the Moses Lake Maintenance Facility Site is not on the NPL, the NCP is not applicable to this RI/FS. Sections of the NCP may be relevant and appropriate, however, depending on site conditions.
Resource Conservation and Recovery Act Title 42 USC 6901 et seq	Portions Applicable	The Resource Conservation and Recovery Act (RCRA) consists of standards and criteria controlling the treatment, storage and disposal of hazardous wastes. The EPA has granted the State of Washington the authority to implement RCRA through the Department of Ecology's dangerous waste program (WAC 173-303). Therefore, to avoid redundancy, RCRA criteria which are potentially ARAR for the Moses Lake Maintenance Facility Site are not detailed here. The State of Washington equivalent criteria are presented in the state ARAR discussions and in Table 6-2. Since hazardous wastes are not present on the Site, this regulation is not applicable.

TABLE 6-1

FEDERAL ARARS FOR THE MOSES LAKE MAINTENANCE FACILITY

Requirements	Applicable or Relevant & Appropriate	Comment (informal and not legal opinion)
Safe Drinking Water Act of 1974 Title 42 USC 300, et seq. National Primary and Secondary Drinking Water Standards 40 CFR 141, 143	Applicable	MTCA requires that groundwater clear up levels be at least as stringent as maximum contaminant levels (MCLs), secondary maximum contaminant levels (SMCLs), and non-carcinogen maximum contaminant level goals (MCLGs) established under the Safe Drinking Water Act where groundwater is a current or potential future source of drinking water.
Toxic Substance Control Act (TSCA) Title 15 USC 2601 et seq. Regulation of PCBs 40 CFR 761	Not Applicable	TSCA requires that material contaminated with PCBs at concentrations of 50 ppm or greater be disposed of in an incinerator or by an alternate method that achieves an equivalent level of performance. Liquids at concentrations between 50 and 500 ppm and soils above 50 ppm may also be disposed in a chemical waste landfill. TSCA requirements do not apply, however, to PCBs at concentrations less than 50 ppm. TSCA requirements are potentially applicable to remedial actions at the Site if PCBs are detected above this level in excavated soils. To date, however, there is no historical evidence of PCB use or disposal at the Moses Lake Maintenance Facility Site and therefore this regulation is not applicable to the Site.

TABLE 6-2

Requirements	Applicable or Relevant & Appropriate	Comment (informal and not legal opinion)
STATE ARARS		
Model Toxics Control Act Ch. 70.105D RCW	Applicable	MTCA is the key governmental regulation governing the conduct of the overall investigation and cleanup process for the Site and is therefore applicable. MTCA describes the requirements for selecting cleanup actions, preferred technologies, policies for use of permanent solutions, the time frame for cleanup, and the process for making decisions. The regulation specifies that all cleanup actions be protective of human health, comply with all applicable state and federal regulations, and provide for appropriate compliance monitoring.
		Specific criteria for the various cleanup methods are presented in the MTCA regulations. The MTCA regulations specify that cleanup actions utilize permanent solutions to the maximum extent practicable. Although MTCA identifies a hierarchy of preferred technologies that should be evaluated for use in the cleanup action, cost may also be a factor in determining points of compliance and selection of cleanup actions. For example, if the cost of cleanup action is substantial and disproportionate to the incremental increase in protection compared to a lesser preferred cleanup action, the less preferred action may be selected. Generally, technologies that recycle or re-use materials are preferred most, followed by methods that destroy or detoxify hazardous substances, and cleanup methods that may leave contaminants on-site.
		Amendments to MTCA (RCW 70.105D.090) exempt remedial actions conducted pursuant to an Agreed Order or a Consent Decree from the procedural requirements of several state laws. These include the State Clean Air Act (RCW 70.94), Solid Waste Management - Reduction and Recycling Act (RCW 70.95), Hazardous Waste Management Act (RCW 70.105), Water Pollution Control Law (RCW 90.48), Shoreline Management Act (RCW 90.58), and Construction Projects in State Waters (RCW 75.20). In addition, the exemption also applies to the procedural requirements of any laws requiring or authorizing local governmental permits or approval for the remedial action. Therefore, while substantive compliance is necessary, permits and approvals are not required for remedial actions at the Site.
Model Toxics Control Act Cleanup Regulations WAC 173-340	Applicable	WAC 173-340, which implement the requirements of MTCA, contains the primary regulations under which the Moses Lake Maintenance Facility Site RI/FS process is being conducted and is therefore applicable. These regulations establish administrative processes and standards to identify, investigate and cleanup facilities where hazardous substances have been released.

TABLE 6-2

Requirements	Applicable or Relevant & Appropriate	Comment (informal and not legal opinion)
Regulation of Public Groundwater Ch. 90.44 RCW Water Quality Standards for Groundwater WAC 173-200	Not ARAR	The rule establishes groundwater quality standards to provide for the protection of public health and existing/future beneficial uses. This standard specifically exempts CERCLA and MTCA cleanup actions, and provides for groundwater cleanup standards at such sites to be developed under WAC 173-340-720. Therefore, WAC 173-200 is neither applicable nor relevant and appropriate to the Moses Lake Maintenance Facility Site.
Department of Health Standards for Public Water Supplies WAC 246-290	Applicable	The rule established under WAC 246-290 defines the regulatory requirements necessary to protect consumers using public drinking water supplies. The rules are intended to conform with the federal Safe Drinking Water Act (SDWA), as amended. WAC 246-290-310 establishes maximum contaminant levels (MCLs) which define the water quality requirements for public water supplies. WAC 246-290-310 establishes both primary and secondary MCLs and identifies that enforcement of the primary standards is the Department of Health's first priority. The standards set under WAC 246-290-310 are set at the levels established under the federal SDWA.
Department of Game Procedures WAC 212-12	Potentially Applicable	This standard defines the requirements that the Department of Game must take to protect endangered or threatened wildlife. These requirements may be applicable if endangered or threatened wildlife are identified at the Site or within Department of Natural Resources records searches.

TABLE 6-2

Requirements	Applicable or Relevant & Appropriate	Comment (informal and not legal opinion)
State Environmental Policy Act (SEPA) Ch. 43-21C RCW		
SEPA Rules WAC 197-11 SEPA Procedures WAC 173-802	Applicable	SEPA is applicable to remedial actions at the Moses Lake Maintenance Facility Site. Ecology is the lead agency for MTCA remedial actions performed under a Consent Decree or an Agreed Order pursuant to WAC 197-11-253. The SEPA process is triggered when a governmental action is taken on a public or private proposal. According to WAC 197-11-784, a proposal includes both regulatory decisions of agencies and actions proposed by applicants. If the proposal is not "exempt", Ecology will require the submission of a SEPA checklist which solicits information regarding how the proposal will affect elements of the environment, such as air, water, etc. Ecology will use the SEPA process for this site as a mechanism to identify potential wetland-related concerns early in the permitting process. While substantive authority under SEPA can be used to require additional wetland protection, it is used primarily as a means of identifying impacts that are regulated under other statutes. If the proposal is determined by Ecology to have a "probable significant adverse environmental impact", an environmental impact statement (EIS) will be required which examines potential environmental problems that would be caused by the proposal and options for mitigation. If in Ecology's opinion, there will be no significant adverse environmental impact, a Determination of Nonsignificance (DNS) will be issued and the SEPA process is completed without preparation of an EIS. Any public comment period required under SEPA must be combined with any comment period associated with the MTCA process in order to expedite and streamline public input. According to WAC 197-11-259, if Ecology makes a determination that the proposal will not have a probable significant adverse environmental impact, the DNS can be issued with the draft Cleanup Action Plan prepared pursuant to MTCA.
Hazardous Waste Management Act 70.105 RCW	Portions Applicable	Recent amendments to MTCA (RCW 70.105D.090) exempt cleanup actions conducted pursuant to a Consent Decree or Agreed Order from the procedural requirements of this law. The exemption does not apply to the substantive provisions, however, which still may apply depending on site conditions. Also, recent amendments to RCW 70.105 provide a conditional exemption to state-only dangerous wastes generated during a cleanup action conducted under a Consent Decree. Therefore, substantive provisions of this Act may be applicable if non-exempt dangerous wastes are generated during cleanup.

TABLE 6-2

Requirements	Applicable or Relevant & Appropriate	Comment (informal and not legal opinion)
Dangerous Waste Regulations WAC 173-303		A partial list of potentially applicable sections of the Dangerous Waste Regulations is included below.
Designation of Waste WAC 173-303-070	Applicable	These requirements establish the methods and procedures to determine if solid waste requires management as dangerous waste. The substantive requirements of this section may be applicable if remedial activities involve the generation of waste.
Requirements for Generators of Dangerous Waste WAC 173-303-170	Applicable	Substantive requirements for generators of dangerous waste established under this chapter may be applicable to remedial actions performed at the Site if dangerous waste is generated.
Closure and Post Closure WAC 173-303-610 Releases from Regulated Units	Potentially relevant and appropriate Potentially relevant and	This section describes closure and post-closure performance standards for dangerous waste units, including requirements for plan preparation, maintenance and monitoring of waste containment systems, groundwater monitoring, and deed notices, etc. Most of the requirements of this section are procedural, and not relevant because of the MTCA exemption for procedural requirements. Subsection 610(2), "Closure performance standard", corresponds to threshold requirements under MTCA. Therefore, the remedy selected by Ecology will satisfy this closure performance standard by definition. Some of these regulations may be relevant and appropriate, however. The most relevant portion of Section 610 is subsection (7), "Post-closure care and use of property". This subsection addresses post-closure maintenance and monitoring, including groundwater monitoring. Section (10) requires a notice in the property deed. The relevant requirements of Section 610(7) and (10) may be appropriate for the Moses Lake Maintenance Facility Site. WAC 173-303-645 regulates releases from regulated units. Although the Moses Lake Maintenance Facility Site does not meet the definition of a regulated dangerous waste unit, the requirements of this section are relevant. Portions of this section may be appropriate, such as:
WAC 173-303-645	appropriate	 Groundwater protection standard, 645(3) Compliance period, 645(7) General groundwater monitoring requirements, 645(8) Detection monitoring program, 645(9) Compliance monitoring program, 645(10). The relevance and appropriateness of these sections will be considered in the preparation and review of the Compliance Monitoring Program required under MTCA.

TABLE 6-2

Requirements	Applicable or Relevant & Appropriate	Comment (informal and not legal opinion)
Solid Waste Management, Recovery, and Recycling Act Ch. 70.95 RCW		Amendments to MTCA (RCW 70.105D.090) exempt cleanup actions conducted pursuant to a Consent Decree or Agreed Order from the procedural requirements of this law. The exemption does not apply to the substantive provisions, however, which still may apply depending on site conditions.
Minimum Functional Standards (MFS) for Solid Waste Handling WAC 173-304	Applicable	MTCA regulations [WAC 173-340-710(b)(c)] specify that WAC 173-304 contains the "minimum requirements" for landfill closure conducted as a MTCA cleanup action.
Water Well Construction CH. 18.104 RCW		
Minimum Standards for Construction and Maintenance of Water Wells WAC 173-160	Applicable	These requirements are applicable to remedial actions that include construction of wells used for groundwater extraction, monitoring, or injection of treated groundwater or wastes. These requirements also include standards for well abandonment.
Water Pollution Control/Water Resources Act Ch. 90.48 RCW/Ch. 90.54 RCW		Recent amendments to MTCA (RCW 70.105D.090) exempt cleanup actions conducted pursuant to a Consent Decree or Agreed Order from the procedural requirements of this law. The exemption does not apply to the substantive provisions, however, which still may apply depending on site conditions.
Surface Water Quality Standards WAC 173-201A	Applicable	WAC 173-201A is the primary regulation covering wetlands and other waters of the StateSince water quality standards are set at levels protective of aquatic life, these standards are only applicable to surface waters at the Site which either support or have the potential to support aquatic life. Groundwater beneath the Site may eventually discharge to Milwaukee drainage or the wetlands, therefore surface water quality criteria established under this chapter may potentially be applicable to the groundwater at the point of discharge to the waterway. Ecology has announced anticipated rule development for the purpose of adopting risk-based numeric limits for protection of public health as required by the federal CWA (WSR-18-095). Other proposed changes to the standard were also announced in WSR-94-16-056.
State Waste Discharge Program WAC 173-216	Applicable	Requirements of this program may be applicable to remedial actions that include discharges to the ground. The chapter implements a permit system applicable to industrial and commercial operations that discharge to the groundwater, surface waters, or municipal sewerage systems. Specific discharges prohibited under the program are identified. Cleanup actions conducted under a Consent Decree or Agreed Order are exempt, however, from procedural requirement (permits).

TABLE 6-2

Requirements	Applicable or Relevant & Appropriate	Comment (informal and not legal opinion)			
National Pollution Discharge Elimination System Permit Program WAC 173-220	Applicable	Establishes a state permit program pursuant to the national NPDES system. Substantive sections of the regulation may be applicable to remedial alternatives that involve discharges to surface waters. Discharges may include site run-off, spillage, leaks, sludge, or treated waste disposal.			
Shoreline Management Act Ch 90.58 RCW	Not Applicable	The wetlands adjacent to the Site are not within 200 feet of a shoreline water body.			
Washington Clean Air Act Ch. 70.94 RCW and Ch. 43.21A RCW		Recent amendments to MTCA (RCW 70.105D.090) exempt cleanup actions conducted pursuant to a Consent Decree or Agreed Order from the procedural requirements of this law. The exemption does not apply to the substantive provisions, however, which still may apply depending on site conditions.			
General Regulations for Air Pollution Sources WAC 173-400	Applicable	Substantive standards established for the control and prevention of air pollution under this regulation may be applicable to remedial actions proposed for the operable unit. The regulation requires that all sources of air contaminants meet emission standards for visible, particulate, fugitive, odors, and hazardous air emissions. Washington State Department of Ecology Air Quality Program enforces and administers these requirements in Grant County. Refer to discussion under Washington State Department of Ecology Air Quality Program.			
Controls for New Sources of Air Pollution WAC 173-460	Applicable	This standard requires that new sources of air emissions provide emission estimates for toxic air contaminants listed in the regulation. The standard requires that emissions be quantified and used in risk modeling to evaluate ambient impacts and establish acceptable source impact levels. These standards are applicable since the regulation specifically lists sites subject to MTCA actions.			
Washington State Department of Ecology Air Quality Program	Not ARAR	Ecology Air Quality Program has jurisdiction over regulation and control of the emission of air contaminants and the requirements of state and federal Clean Air Acts from all sources in Grant County.			
LOCAL ARARs ^a					
Grant County Zoning Code	Applicable	Substantive requirements of the County zoning ordinance are applicable to remedial actions at the Moses Lake Maintenance Facility Site. A grading permit will likely be required by the County for any capping or excavation remedial alternatives.			

REMEDIATION CLEANUP GOALS MOSES LAKE MAINTENANCE FACILITY

COC	Site Clo	eanup Goals	T I :4-	Source of Criteria	
	Soil (mg/kg)	Groundwater (ug/L)	Units		
Diesel Range Petroleum Hydrocarbons	460	500	mg/kg	Ecological Concern Table 749-2	
Oil Range Petroleum Hydrocarbons	2,000	2,000 500		MTCA Method A	
Gasoline Range Petroleum Hydrocarbons	30 / 100*	30 / 100* 800/1000*		MTCA Method A	
Xylenes	9	NA	mg/kg	MTCA Method A	
Lead	220 NA		mg/kg	Ecological Concern Table 749-2	

Notes

^{* -} The MTCA Method A Compliance Cleanup Level for gasoline range petroluem hydrocarbons in soil is 100 mg/kg if benzene is not present and the total of TEX is less than 1%.

^{** -} The MTCA Method A Compliance Cleanup Level for gasoline range petroluem hydrocarbonsin groundwater is 1000 ug/L if benzene is not present NA - Not Applicable analyte is not a Site COC

SUMMARY OF REMEDIATION TECHNOLOGIES CONSIDERED FOR THE MOSES LAKE MAINTENANCE FACILITY

Technology	Screening Comments	Retained? (Yes/No)	
NO ACTION			
No Action	Baseline	Yes	
INSTITUTIONAL CONTROI	LS AND MONITORING		
Site Access Restrictions	500		
Fencing Warning signs	Effective, easy to implement, low cost.	Yes	
Security patrols	Effective, easy to implement, low cost. Expensive and unnecessary.	Yes	
Monitoring	Monitoring conducted for long term effects and migration of COC. term and long	No Yes	
Land Use Restrictions	Site is an active maintenance facility with plans for additional development.	Yes	
CONTAINMENT		L	
Capping	Capping is proven, effective technology for providing reliable long-term containment and preventing or minimizing off-site migration of COCs.	Yes	
Dust Control	Potentially necessary during excavation or capping.	Yes	
Surface water controls	Useful component of cap remedy.	Yes	
REMOVAL		**************************************	
Excavation (soil) Backhoe Loader Bulldozer	Excavation would be effective in preventing or minimizing off-site migration of COCs. It is a feasible technology.	Yes	
EX-SITU SOIL TREATMENT			
Reuse/recycling	No waste materials identified with the potential for reuse or recycling; usually not feasible for complex mixtures of heterogeneous waste and affected soil.	Yes/Landfill Cap	
Dry sieving	Potentially effective; easy to implement; inexpensive means of reducing off- site disposal costs.	Yes	
Physical soil washing	May not be effective at this site; not established technology; difficult to implement due to the complexity and site constraints, unlikely to be cost-effective.	No	
Chemical extraction	Unproven; may not be effective at this site; difficult to implement; costly.	No	
Fixation (chemical stabilization)	effective for petroleum hydrocarbons, moderate cost.	Yes / for off- site disposal	
Biological treatment	Not effective on many constituents of potential concern, such as chlorinated organic compounds and metals, therefore not suitable as general treatment for this site	No	
Chemical oxidation/reduction	Unproven; may not be effective for site constituents of concern; other technologies are at least as effective and less costly.	No	
Thermal treatment On-site	On-site thermal treatment may be difficult to implement due to physical		
Off-site	constraints and permitting difficulties; off-site thermal treatment is available and potentially more feasible.	Yes	
IN-SITU TREATMENT	persimally more reasons.	Yes	
Biological treatment	In-situ treatment technologias are inherently and 1'0"		
Chemical oxidation/reduction	In-situ treatment technologies are inherently more difficult to control than the corresponding ex-situ treatment technologies. Treatment effectiveness is often difficult to verify. In-situ treatment would not be more protective than	No	
In-situ fixation Soil flushing	capping; therefore, no need for in-situ treatment.		
Vapor extraction			
DISPOSAL	In-place containment (copping in southing)	***************************************	
On-site disposal (constructed andfill)	In-place containment (capping in combination with natural subsurface conditions) would may not provide sufficient protection; off-site landfill is a better option.	No	
Off-site commercial landfill	Feasible.	Yes	

EVALUATION SUMMARY OF RETAINED REMEDIATION ALTERNATIVES

		Alternative			
	Calculated	3	4	5	6
Criteria	Criteria Weights	Capping, Monitoring and Institutional Controls	Excavation and Off-Site Landfill	Excavation and On-Site Treatment	Excavation and Off-Site Treatment
Determining Whether Alternative Uses Permanent Solution to the Maxi	mum Extent Pra	acticable [WAC 173-34	40-360(2)(b)(i)]		
Protectiveness	8.33%	5	8	9	9
Permanence	8.33%	3	7	10	9
Cost	8.33%	8	7	6	5
Effectiveness Over the Long-Term (and Reliability)	8.33%	3.5	9	7.5	8.5
Management of Short-Term Risk	8.33%	8	7	4	5
Technical and Administration Implementability Public Concerns*	8.33%	8	7	3	6
Permanent Solution Benefit Score	50.00%	5.9	7.5	6.6	7.1
Determining Whether Alternative Provides a Reasonable Restoration T	ime Frame [WA	C 173-340-360(2)(b)(ii)]		
Reasonable Restoration Time Frame Score	50.00%	2	9	8	9
Total Net Benefit					
Total Score (Sum of Permanent Solution and Restoration Time Scores)	100%	7.9	16.5	14.6	16.1
See text for criteria definitions.					
The numeric value of one scoring unit of the criterion relative to one scoring unit of the long-term effects.	ectiveness and reliability	criterion.			

See text for score basis.

TABLE 10-2

SUMMARY OF COSTS FOR REMEDIATION ALTERNATIVES

	Alternative	Estimated Costs ^a		
		Capital ^b	O&M ^c	Total
3	Capping, Monitoring and Institutional Controls	\$204,900	\$326,400	\$531,300
4	Excavation and Off-Site Landfill	\$742,153	\$0	\$742,153
5	Excavation and On-Site Treatment	\$906,519	\$0	\$906,519
6	Excavation and Off-Site Treatment	\$1,004,353	\$0	\$1,004,353

Costs are for early 2004.

Includes operating costs during remedial action.

Long-term maintenance and monitoring for 30 years; net present value at 4% interest (net of inflation).